

various authorities to prove that the natural tendency of men is towards assortative mating; that like tends to be attracted by like. Dr. Van de Velde, on the other hand, quotes Kretchmer and other authorities to the opposite effect. "They found that pairs who contrasted in physical character decidedly predominated over pairs with similar qualities." The disagreement serves as a salutary reminder to students of eugenics of the necessity of making an independent examination of the facts before forming definite opinions. But, apart from the discrepancy in the facts, there is a complete disagreement as to the eugenic aspects of inbreeding. By Dr. Van de Velde the contrast marriage is advocated as the safest; and in support of this view, he remarks: "The fundamental purpose of bisexual reproduction must be looked for in the possibility which it gives of levelling out abnormal and eccentric characteristics."

The present book is divided into three sections, dealing with the subject from the biological, the psychological and the social points of view, respectively; of which we are more especially concerned with the first. This opens with the question: "What is it that we fall in love with?" and it examines the various characteristics which tend to attract individuals of different sex to each other. The second chapter treats of blemishes and not only describes them in detail but offers a good deal of useful and expert advice as to measures to remedy them, including face creams, freckle lotions and preparations for the treatment of sweating hands and feet. Dr. Van de Velde does not even despise the humble lip-stick or those applications of surgery that aim at the cure of wrinkles or the improvement of an ill-formed nose.

This chapter, with its kindly, sympathetic interest in minor human troubles, illustrates the tone of the whole book. The author is a physician of long experience, able and very willing to give wise counsel to those about to embark on marriage, not only in regard to the choice of a partner, but also as to their conduct in the married state; insisting, for instance, on the importance of maintaining

after marriage the same attention to appearance as before. So, in regard to the marriage of persons of widely different age, he gives some very wise and carefully considered advice and treats at considerable length of the various medicinal and surgical measures for rejuvenation, but with much more caution than enthusiasm.

It is unnecessary to examine at length the great mass of information and advice which fill up the body of the book. Taking it as a whole, it appears to serve admirably the purpose for which it was written. The style is lively and agreeable with a certain note of intimacy slightly suggestive of the consulting room; and the book is pervaded by a kindness which, with the wisdom and learning of the writer, bespeaks the confidence of the reader.

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## PHILOSOPHY

**Fisher, R. A.** *Indeterminism and Natural Selection*. Philosophy of Science. January 1934. Vol. I, No. 1.

THE main purpose of Professor Fisher's article is to plead for the autonomy of Biology, to urge biologists to develop independently concepts suitable to their special field of study, instead of copying the methods of the exact sciences. Such an independent attitude, he thinks, would lead to the frank recognition of the important part played by purposive action in the life of organisms, and of the striving and foresight which prompt purposive activities. More particularly, the process of evolution by natural selection would not be treated as purely mechanical or quasi-mechanical in character, but as directed by some sort of selective activity. Instead of regarding the causes of mutations (so many of which actually seem to be deleterious) as the causes of evolutionary change, the cause might be found in the selective process which determines that the beneficial mutations shall be effective, and the deleterious mutations be ineffective as causes of evolutionary change.

These views, it seems to me, are entirely reasonable, even if they are not shared by all biologists. When, however, Professor Fisher tries to justify them by basing them on indeterminism, then he is on much more doubtful ground. Like nearly all advocates of indeterminism, Professor Fisher appears to identify "determinism" with physical and chemical causation of a rigid and uniform character. But this kind of determinism, commonly named or misnamed "mechanism," is by no means the only kind of determinism. There is, for instance, such a thing as mental determinism, on which psychology is based. In fact, the school of thinkers known as "absolute idealists" believe in thoroughgoing determinism, although they reject the reality of matter, and, consequently, of physical and chemical determinism. Curiously enough Professor Fisher himself speaks of the "selective process" as "the determining cause" of evolutionary change, and he even pleads for the application of intelligence to the "guidance" (= determination) of social evolution. Indeed, since he emphasizes the importance of the concept of "causality" in science, he is not opposed to every kind of determinism. Apparently there are two features in orthodox determinism to which Professor Fisher takes exception. One of these has already been mentioned, namely the occasional tendency to identify determinism with mechanism. The second feature is the tendency to assume that the determining cause uniformly produces one kind of effect only. Professor Fisher prefers to think of a cause as "creative," that is, presumably, as producing various effects on different occasions. The cause of any event is, of course, more or less complex, consisting of a number of part-causes (or conditions, as they are usually called). Now, Professor Fisher does not attribute a creative quality to any one of these components, but only to the aggregate as such. This combination of uniform determinism in the parts and of indeterminism in the whole does not appear acceptable. Is it not at least as reasonable to suppose that when an aggregate of causal components produces an unusual result, then some addi-

tional factor may have been operative, even if this additional factor is as yet unknown? This is in fact a way in which new discoveries have often been made.

Some of the arguments adduced in support of indeterminism seem passing strange. For instance, it is urged that the fact that memory extends only to past experiences, and not to future experiences, is fatal to the assumption of determinism. Considering that what we remember is the effect of what we have experienced, how can there be a memory of what has not yet been experienced? Mathematicians are rather apt to think of cause and effect as though they were just the two sides of an equation, either of which is implied in the other. But cause and effect are not reversible like the two sides of an equation—a cause produces its effect, the effect does not produce its cause. A somewhat similar tendency to identify thoughts about events with the events themselves runs through so much of the reasoning of indeterminists. They commonly speak of causes as affecting the *probabilities* of subsequent events. Probability, however, is not a property of the events themselves. An event just happens; it happens neither "probably" nor "certainly." Probability is a property of our *judgments* concerning events. Except perhaps to an extreme idealist, an event and our judgment about it are different things; and the event itself may well be determined even when, owing to insufficient knowledge, our judgments about it can only be probable.

In defending determinism I am not suggesting that it can be proved adequately, or that it should be treated as a sacred dogma. All I wish to maintain is that determinism makes things more intelligible than does indeterminism, and that it has led to discoveries which might not have been made if investigators had been content to believe that precisely the same causes (or complex of antecedents) might really be followed by different results. After all, a scientist need not be dogmatic. If he can discover a causal uniformity, well and good; if not, he tries to discover a statistical regularity; and if he fails in this, too, then he turns to some other

problem. The allegations that indeterminism renders possible a unification of the concept of natural law in all spheres of research, and that it alone vindicates human freedom and aspiration, seem to me unacceptable. But it would take up too much space to deal with them here. Moreover, considering the different meanings which we assign to the term "determinism," it is quite possible that I am in fuller agreement with Professor Fisher's views than may appear on the surface. And I certainly agree with his main contentions in the article under review. It is more definite than are most discussions on indeterminism, and will repay careful reading.

A. WOLF.

## MEDICINE

**Stone, Chester T., M.D.** *The Dangerous Age in Men.* London, 1934. Macmillan & Co. Ltd. Pp. 105. Price 7s. 6d.

Books dealing with health culture and home treatment are on the increase. The motive behind this is good—namely, that men and women should have a better understanding of their bodies and of hygiene, and that the study of disease and of therapeutics should not remain the prerogative of the physician. But this preoccupation with health and disease carries with it a certain danger. Most medical men during their early studies have had the experience of believing that they were the victims of some fatal illness from which in the light of fuller knowledge they discovered that they were happily free. How much more likely is a layman, in reading of the early signs of a disease, to discover in himself symptoms that suggest that he is suffering from it.

Take for example Dr. Chester T. Stone's chapter on enlarged prostate. "Every man approaching the age of fifty is particularly interested in knowing what his chances are of escaping true enlargement or hypertrophy of the prostate gland." Earlier in the book the reader has been informed that "medical

authors have variously estimated that from 35-90 per cent. of adult males have trouble with the prostate gland." With this knowledge, the reader of fifty or over must feel that his chances of escaping enlargement are somewhat poor. Turning the pages anxiously he learns that early symptoms are attacks of "frequent urination, burning when passing the urine and perhaps some tenesmus (strain) and pain." There are few people who have not suffered at one time from an over-frequent desire to urinate. Should the reader feel at all nervous and dwell upon this fact, frequency will automatically occur. Anxiety may often be productive of pain and tenesmus and, with very little difficulty, from reading of the symptoms a man may pass to a practical knowledge of them.

This is no theoretical objection to the production of medical literature for the laity. The reviewer himself has had the experience of interviewing lay readers of his own medical works in the consulting room and of discovering that inadvertently he has been responsible for the production of a neurosis. So also may Dr. Chester Stone find it necessary to deal in the future with a considerable number of elderly men who have become unhealthily introspective about the state of their prostates.

If, however, it is agreed that books on disease are on the whole beneficial to the public, then we have no hesitation in saying that Dr. Stone's work on the dangerous age in men is an excellent example of this form of literature. With the advice that it gives no one can quarrel: "A car owner, if he is a careful man, takes his machine to an expert at the first sign of trouble. He does not let the pistons rust tight in the cylinders, the generators become corroded or the batteries run down and then expect to pass everything on the road. He prefers to keep his present machine working at a maximum efficiency. It is strange but true that this same man will neglect his own body."

Since this is a work which deals primarily with the prostate, it is natural that the author should lay stress on the importance of living a normal and healthy sex life. This is good advice. At the same time urologists are